

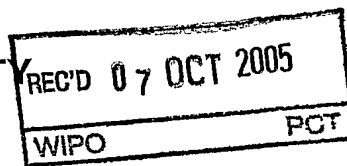
PATENT COOPERATION TREATY



PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)



Applicant's or agent's file reference INT1127MAJR	FOR FURTHER ACTION	See Form PCT/IPEA/416
International application No. PCT/ZA2004/000079	International filing date (day/month/year) 13.07.2004	Priority date (day/month/year) 18.07.2003
International Patent Classification (IPC) or national classification and IPC F42D1/055		
Applicant DETNET SOUTH AFRICA (PTY) LTD ET AL.		
<p>1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of 5 sheets, including this cover sheet.</p> <p>3. This report is also accompanied by ANNEXES, comprising:</p> <p>a. <input checked="" type="checkbox"/> sent to the applicant and to the International Bureau a total of 4 sheets, as follows:</p> <p><input checked="" type="checkbox"/> sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).</p> <p><input type="checkbox"/> sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.</p> <p>b. <input type="checkbox"/> (sent to the International Bureau only) a total of (indicate type and number of electronic carrier(s)) , containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).</p>		
<p>4. This report contains indications relating to the following items:</p> <p><input checked="" type="checkbox"/> Box No. I Basis of the opinion</p> <p><input type="checkbox"/> Box No. II Priority</p> <p><input type="checkbox"/> Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</p> <p><input type="checkbox"/> Box No. IV Lack of unity of invention</p> <p><input checked="" type="checkbox"/> Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</p> <p><input type="checkbox"/> Box No. VI Certain documents cited</p> <p><input type="checkbox"/> Box No. VII Certain defects in the international application</p> <p><input type="checkbox"/> Box No. VIII Certain observations on the international application</p>		
Date of submission of the demand 20.07.2005	Date of completion of this report 10.10.2005	
Name and mailing address of the international preliminary examining authority:  European Patent Office - P.B. 5818 Patentlaan 2 NL-2280 HV Rijswijk - Pays Bas Tel. +31 70 340 - 2040 Tx: 31 651 epo nl Fax: +31 70 340 - 3016	Authorized Officer Lostetter, Y Telephone No. +31 70 340-1098 	

**INTERNATIONAL PRELIMINARY REPORT
ON PATENTABILITY**

International application No.
PCT/ZA2004/000079

Box No. I Basis of the report

1. With regard to the **language**, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.
- ☐ This report is based on translations from the original language into the following language , which is the language of a translation furnished for the purposes of:
- ☐ international search (under Rules 12.3 and 23.1(b))
 - ☐ publication of the international application (under Rule 12.4)
 - ☐ international preliminary examination (under Rules 55.2 and/or 55.3)
2. With regard to the **elements*** of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report):*

Description, Pages

1-23 as originally filed

Claims, Numbers

1-18 filed with telefax on 20.07.2005

Drawings, Sheets

1/7-7/7 as originally filed

- ☐ a sequence listing and/or any related table(s) - see Supplemental Box Relating to Sequence Listing
3. ☐ The amendments have resulted in the cancellation of:
- ☐ the description, pages
 - ☐ the claims, Nos.
 - ☐ the drawings, sheets/figs
 - ☐ the sequence listing (*specify*):
 - ☐ any table(s) related to sequence listing (*specify*):
4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).
- ☐ the description, pages
 - ☐ the claims, Nos.
 - ☐ the drawings, sheets/figs
 - ☐ the sequence listing (*specify*):
 - ☐ any table(s) related to sequence listing (*specify*):

* If item 4 applies, some or all of these sheets may be marked "superseded."

**INTERNATIONAL PRELIMINARY REPORT
ON PATENTABILITY**

International application No.
PCT/ZA2004/000079

Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes: Claims	2-18
	No: Claims	1
Inventive step (IS)	Yes: Claims	
	No: Claims	1-18
Industrial applicability (IA)	Yes: Claims	1-18
	No: Claims	

2. Citations and explanations (Rule 70.7):

see separate sheet

Re Item V

**Reasoned statement with regard to novelty, inventive step or industrial applicability;
citations and explanations supporting such statement**

1. Reference is made to the following document:
D1: EP-A-0601831

2. The present application does not meet the criteria of Article 33(1) PCT, because the subject-matter of claim 1 is not new in the sense of Article 33(2) PCT.

The document D1 discloses (the references in parentheses applying to this document) a method of establishing a blasting system in which a plurality of detonators (16) are connected in a predetermined sequence which includes the steps of providing at least one marker (12) at least at one location in the sequence whereby at least a first detonator in the sequence is distinguished from at least a second detonator in the sequence (*cf. the zones 1-5 of figure 1*), and interrogating the marker (12) to establish information associated with the marker (12), the information relating at least to one or more of the following:

- a) a class or category to which the marker belongs;
- b) the type of marker;
- c) a timing period for a detonator;
- d) information relating to a geological feature in an area in which the blasting system is established or used;
- e) information relating to a configuration or pattern of the blasting system (*cf. the number of detonators, page 5, lines 27-29*);
- f) information relating to a designated feature in the blasting system (*cf. the number of detonators, page 5, lines 27-29*); and
- g) information relating to a detonator or a class of detonators (*cf. the number of detonators, page 5, lines 27-29*).

3. The dependent claims 2-18 relate to minor constructional features which are partly revealed in the prior art quoted in the search report or which form part of the normal

**INTERNATIONAL PRELIMINARY
REPORT ON PATENTABILITY
(SEPARATE SHEET)**

International application No.

PCT/ZA2004/000079

consideration of the person skilled in the art, i.e. they are the result of routine engineering and do not constitute an inspired design. Therefore the dependent claims 2-18 do not appear to contain any additional features which involve an inventive step when combined with the subject-matter of any claim to which they refer.

CLAIMS

1. A method of establishing a blasting system in which a plurality of detonators are connected in a predetermined sequence which includes the steps of providing at least one marker at least at one location in the sequence whereby at least a first detonator in the sequence is distinguished from at least a second detonator in the sequence, and interrogating the marker to establish information associated with the marker and which is characterized in that the information relates at least to one or more of the following:
- a) a class or category to which the marker belongs;
 - b) the type of marker;
 - c) a timing period for a detonator;
 - d) information relating to a geological feature in an area in which the blasting system is established or used;
 - e) information relating to a configuration or pattern of the blasting system;
 - f) information relating to a designated feature in the blasting system; and
 - g) information relating to a detonator or a class of detonators.
2. A method according to claim 1 wherein the marker is interrogated from a remote point.
3. A method according to claim 1 or 2 which includes the step of forming a graphical representation of at least part of the blasting system using at least part of the information which is associated with the marker.
4. A method according to any one of claims 1 to 3 wherein the detonators are connected to a harness and the marker is also connected to the harness.

5. A method according to any one of claims 1 to 4 wherein the location is selected from a physical location in an area in which the detonators are used and a notional location at which the marker is used to identify or distinguish a detonator or detonators in the sequence.

5 6. A method according to any one of claims 1 to 5 which includes the step of configuring the at least first detonator differently from the at least second detonator.

10 7. A method according to claim 6 which includes the step of initiating the at least first detonator differently from the at least second detonator or the remaining detonators.

8. A method according to claim 6 or 7 which includes the step of assigning a time delay to the at least first detonator which differs from a time delay assigned to the at least second detonator.

15 9. A method according to any one of claims 1 to 8 wherein the at least first detonator is distinguished from the second detonator on the basis that the first detonator is associated with a change in a physical pattern or layout in the blasting system.

20 10. A method according to claim 9 wherein the change in the physical pattern or layout is selected from a transition between a main line and a branch line and a boundary between one group of detonators and another group of detonators.

11. A method according to any one of claims 1 to 10 wherein the at least first detonator is distinguished from the at least second detonator on the basis that

the first detonator is associated with a geological feature in rock or terrain in which the blasting system is established, or with an end of a detonator string.

12. A method according to any one of claims 1 to 11 wherein the sequence of detonators extends over at least two zones in which different types of blasting control are to be exercised and wherein the detonators in each zone are initiated in a respective manner which takes account of the characteristics in, and the requirements of, that zone.
13. A method according to claim 12 wherein each zone is demarcated, in the blasting sequence, by indicating or marking at least two locations which are spaced from each other in the detonator sequence.
14. A method according to claim 13 wherein the detonator sequence is configured so that the zones follow one another successively in a geographical sense.
15. A method according to claim 13 wherein the detonator sequence is configured so that at least one zone extends, in the form of a branch line of detonators, from a main line of detonators.
16. A method according to any one of claims 1 to 15 wherein the indicated location designates a transition in the detonator sequence wherein detonators after the location are arranged in two or more zones which extend, from the location, independently of each other.
17. A method according to claim 1 which includes the steps of providing first and second markers which respectively designate a start and an end of a branch line which incorporates at least one detonator, a first connector for connection

to an incoming line, a second connector for connection to an outgoing line, and a third connector for connection to the branch line, and of effecting electrical connections between designated conductors in the respective lines, the markers and the connectors.

- 5 18. A method according to claim 1 which includes the steps of providing first, second and third markers arranged so that the first and second markers respectively designate a start and an end of a first line which incorporates a first row of detonators, and so that the second and third markers designate a start and an end of a second line which incorporates a second row of detonators; a
- 10 first connector for connection to an incoming line; a second connector for connection to an outgoing line, a third connector for connection to the first line; and a fourth connector for connection to the second line; and of effecting electrical connections between designated conductors in the respective lines, the markers and the connectors.

15